

WHAT IS CLAIMED IS:

1. A method comprising:
determining an input resolution of an image;
determining an output resolution of an image; and
providing a control word comprising a first variable indicating a number of input pixels in a scaling cycle, and at least two of a second variable, a third variable and a fourth variable, wherein the second variable indicates a number of output pixels in a scaling cycle, the third variable indicates a number of phases used in the scaling cycle, and the fourth variable indicates a number of right shifts which, when applied to the second variable, indicates a number of phases used in the scaling cycle;
2. The method of claim 1, further comprising:
determining a greatest common denominator (GCD) for the input resolution and the output resolution; and
determining the first variable by dividing the input resolution by the GCD.
3. The method of claim 2, further comprising:
determining the second variable by dividing the output resolution by the GCD;
and
determining the third variable by right shifting the second variable to obtain a value less than or equal to an available number of phases.
4. The method of claim 2, further comprising:
determining the second variable by dividing the output resolution by the GCD;
and
determining the fourth variable to be a number of right shifts applied to the second variable to obtain a value less than or equal to an available number of phases.
5. The method of claim 1, wherein determining the input resolution includes determining the input resolution by reading a register value.

6. The method of claim 5, wherein determining the input resolution includes the register value representing a number of input pixels in a specific dimension.

7. A data structure comprising:

a control word including

a first variable indicating a number of input pixels in a scaling cycle;

and

at least two of a second variable, a third variable and a fourth variable, wherein the second variable indicates a number of output pixels in the scaling cycle, the third variable indicates a number of scaling phases used in the scaling cycle, and the fourth variable indicates a number of right shifts which, when applied to the second variable, indicates a number of phases used in the scaling cycle;

a plurality of coefficient sets, one set for each used scaling phase.

8. The data structure of claim 7 wherein each one of the coefficient sets includes eight coefficients.

9. The data structure of claim 8 wherein a number of bits associated with the eight coefficients is 75 bits.

10. A method of scaling an image comprising:

incrementing a current phase location within a scaling cycle by a first variable to obtain a first adjusted value, the first variable indicative of a number of input pixels in the scaling cycle;

decrementing, in response to the first adjusted value being greater than the second variable, the first adjusted value by one or more times a second variable indicative of a number of output pixels in the scaling cycle to obtain a second adjusted value less than the second variable; and

determining an index value to access a coefficient set by right shifting the second adjusted value a predetermined amount.

11. The method of claim 10 further comprising:
accessing the coefficient set based on the index value; and
determining a scaled pixel value based upon the coefficient set.

12. The method of claim 10 further comprising:
when the index value is within a first range, accessing the coefficient set from
a mirror location;
when the index value is within a second range, accessing the coefficient set
from a direct location;
determining a scaled pixel value based upon the coefficient set.

13. The method of claim 12 wherein determining the scaled pixel value
further comprises reversing the coefficients when the coefficient set is accessed from
a mirror location.

14. The method of claim 10 further comprising:
receiving the predetermined amount from a control word.

15. The method of claim 10 further comprising:
determining the predetermined amount from a control word

16. A video scaler comprising:
a means for incrementing a current phase location within a scaling cycle by a
first variable to obtain a first adjusted value, the first variable
indicative of a number of input pixels in the scaling cycle;
a means for decrementing, in response to the first adjusted value being greater
than the second variable, the adjusted value by one or more times a
second variable indicative of a number of output pixels in the scaling
cycle to obtain a second adjusted value less than the second variable;
and
a means for determining an index value to access a coefficient set by right
shifting the second adjusted value a predetermined amount.

17. A system comprising:

an data processor for executing instructions;

a memory for storing the instructions, the instructions to

increment a current phase location within a scaling cycle by a first

variable to obtain a first adjusted value, the first variable

indicative of a number of input pixels in the scaling cycle;

decrement, in response to the first adjusted value being greater than the

second variable, the adjusted value by one or more times a

second variable indicative of a number of output pixels in the

scaling cycle to obtain a second adjusted value less than the

second variable; and

determine an index value to access a coefficient set by right shifting

the second adjusted value a predetermined amount.

18. A computer readable media storing control information for implementing

a plurality of operations, the operations to:

increment a current phase location within a scaling cycle by a first variable to

obtain a first adjusted value, the first variable indicative of a number of

input pixels in the scaling cycle;

decrement, in response to the first adjusted value being greater than the second

variable, the adjusted value by one or more times a second variable

indicative of a number of output pixels in the scaling cycle to obtain a

second adjusted value less than the second variable; and

determine an index value to access a coefficient set by right shifting the

second adjusted value a predetermined amount.